



# *State of the Corridor Report*

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## **2010 Report on the State Route 99 & Interstate 5 Corridor System Management Plan**

### **Overview**

Corridor System Management Plans (CSMP) are comprehensive operations and management plans intended to maintain and enhance corridor mobility through the integrated management of all major transportation modes within the corridor. This includes highways and freeways, parallel and connecting local and regional roadways, public transit (bus, bus rapid transit, light rail, intercity rail) and bikeways, along with intelligent transportation technologies, which could include ramp metering, coordinated traffic signals, changeable message signs for traveler information, such as incident management, bus/carpool lanes and car/vanpool programs, and transit strategies. Together, these facilities comprise the CSMP managed network displayed in Figures 1 and 2. CSMP success is based on the premise of managing a selected set of transportation components within a designated corridor as a system rather than as independent units. Each CSMP identifies current management strategies, existing travel conditions and mobility challenges, corridor performance management, proposed management strategies, and needed capital improvements.

### **Purpose of the State of the Corridor Report**

The annual State of the Corridor (SOTC) Report maintains the momentum started by the completion of the first CSMP by reporting on the ongoing implementation of CSMP strategies and movement towards true integrated multimodal corridor system management, as well as anticipated corridor mobility challenges, and impediments to CSMP implementation. It is important to note that the analysis of performance in this first report since the completion of the CSMP is limited to the State Highway System (SHS) only due to the lack of performance data for the non-SHS transportation modes. Future editions of this report will include a more comprehensive report on the performance of the various transportation modes within the corridor, regardless of ownership, as we move toward integrated performance measurement, management and operations.

Figure 1: Sacramento & Yolo SR 99/I-5 CSMP

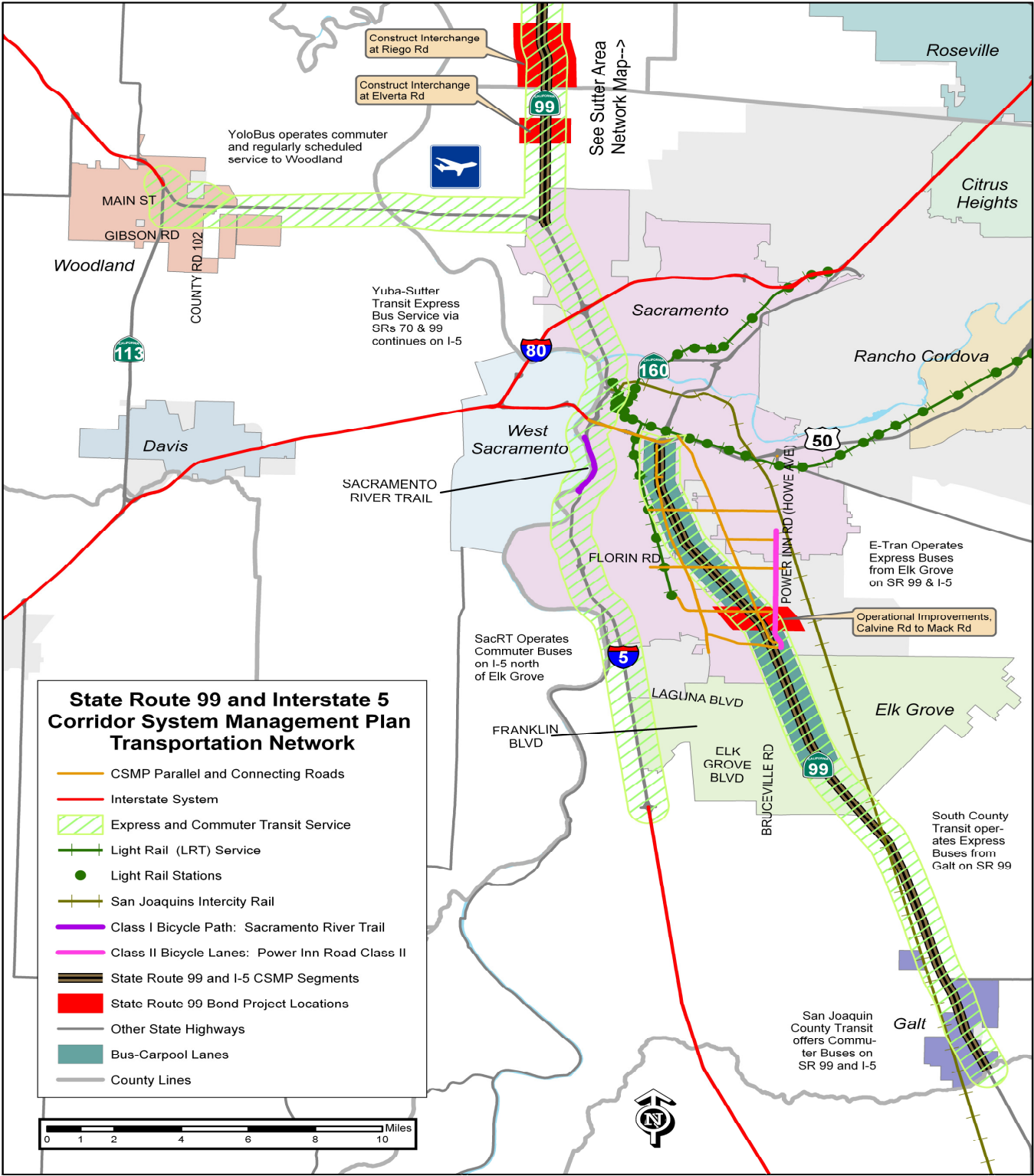
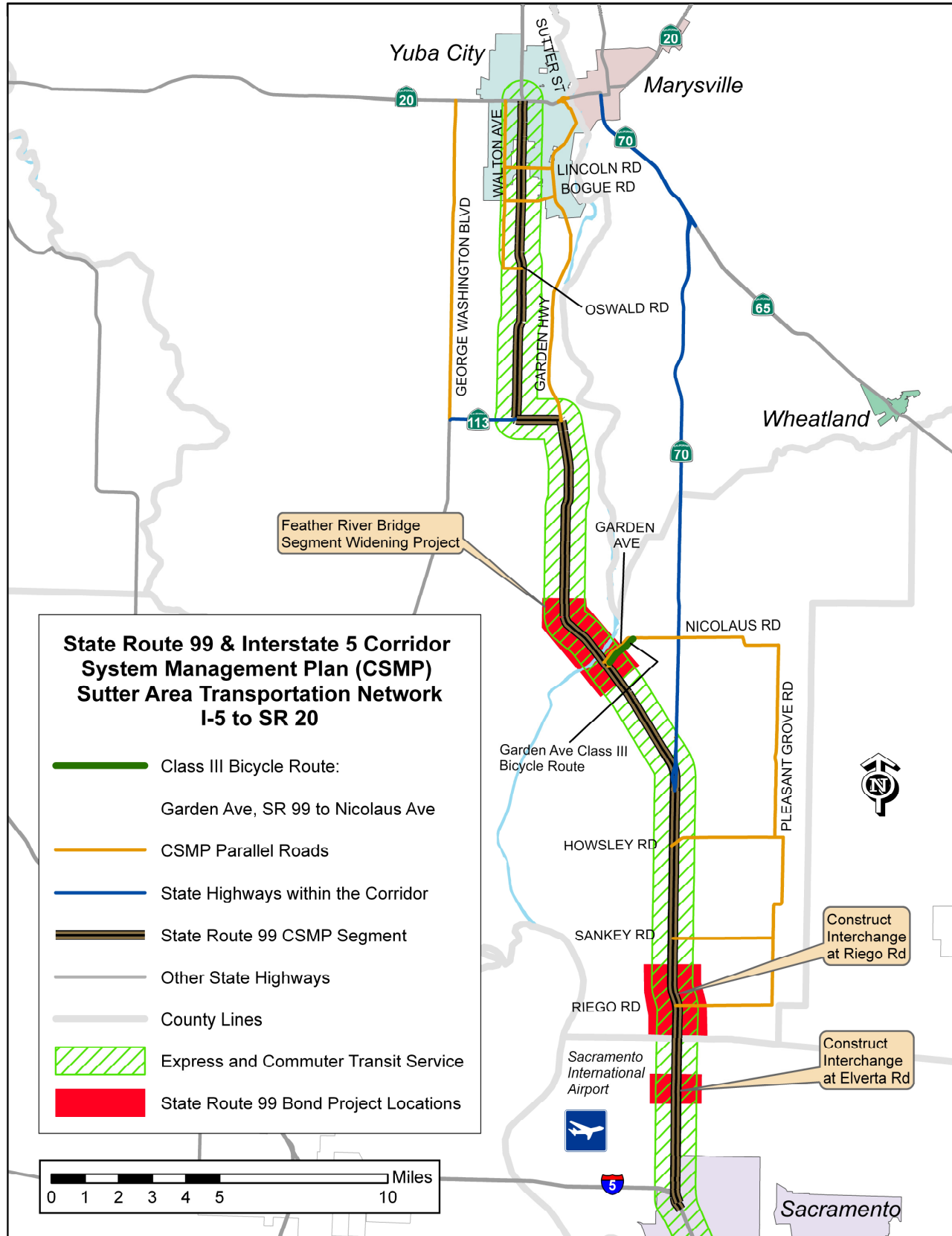


Figure 2: Sutter Area SR 99 CSMP Transportation Network



## Proposition 1B Bond Project Status

CSMPs were developed for corridors associated with the Corridor Mobility Improvement Account and Highway 99 Bond Programs, supported by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006, Proposition 1B. Four projects in the southern part of District 3 were awarded Highway 99 Bond Program funds. The status of these projects are as follows:

**Operational Improvements, including lane extensions, from Calvine Road to Mack Road, in Sacramento County:** The California Transportation Commission (CTC) allocated construction funding on February 25, 2010 for the Operational Improvement Project from Calvine Road to Mack Road on State Route 99 (SR 99). The project was advertised on April 12, 2010 and bids were opened on May 11, 2010. It is anticipated that the contract for this project will be awarded July 15, 2010. Construction completion is scheduled for October 2012.

**Construct Interchange at State Route 99 and Elverta Road, in Sacramento County:** The CTC allocation for construction funding is expected in January 2011 for a new interchange to replace the signalized intersection at SR 99 and Elverta Road. The project will be advertised and bids opened in February 2011. It is anticipated that the contract for this project will be awarded in May 2011 and construction will begin in June 2011. Construction completion is scheduled for spring 2013.

**Construct Interchange at State Route 99 and Riego Road, in Sutter County:**

The CTC allocation for construction funding is anticipated in January/February, 2011 for the construction of a new Interchange at SR 99 and Riego Road to replace the signalized intersection. The project will be advertised in January 2011 and bids will be opened in March 2011. It is anticipated that the contract for this project will be awarded in May 2011. Construction completion is scheduled for the end of 2012.

**Widen Feather Bridge from 2-lane highway to 4-lane expressway, in Sutter County:** The CTC allocated construction funding in January 2010 for a project to widen the Feather River Bridge from a 2-lane highway to a 4-lane expressway. The project was advertised in March 2010 and bids opened in March 2010. It is anticipated that the contract for this project will be awarded in August 2010. Construction completion is scheduled for the fall of 2013.

## Major Corridor Accomplishments

**Downtown-Natomas-Airport Light Rail Extension Phase 1:** The Green Line to the River District (phase 1) is currently under construction and is scheduled to open in January/February 2011. The first phase will extend light rail 1.1 miles north to Richards Boulevard and 7th Street at the Township 9 development. This phase will include two new stations: 8th & H/County Center Station and 7th & Richards/Township 9 Station.

**ARRA Funded Traffic Operations System Projects:** The CSMP notes that a critical component of resolving mobility challenges is the need for detailed data, analysis, and communication regarding system performance. To move toward meeting these needs, work began to install Changeable Message Signs (CMS) and Closed Circuit Television Cameras (CCTV) along I-5 and SR 99. These are financed entirely by the American Recovery and Reinvestment Act of 2009. CMS and CCTV are being installed at the following locations:

### Interstate 5

- NB Laguna Blvd. (CMS)
- SB Laguna Blvd (CMS)
- SB Sutterville Rd. (CMS)
- Garden Highway (CMS)
- NB Arena Blvd. (CMS)
- Del Paso Rd. (CMS)
- Laguna Blvd. (CCTV)
- Arena Blvd. (CCTV)

### State Route 99

- NB Twin Cities Rd. (CMS)
- SB Sheldon Rd. (CMS)
- SB Elkhorn Rd. (CMS)
- Twin Cities Rd. (CCTV)
- Sheldon Rd. (CCTV)
- Elkhorn Blvd. (CCTV)

**I-5 Ramp Meters:** Funds were allocated for the I-5 Ramp Meters Project from P Street to O Street in Sacramento County and the project was advertised in spring 2010. The project will be awarded and go to construction in the summer 2010. The project is anticipated to be completed by fall 2011.

**SR 99 / Sheldon Road New Interchange:** The SR 99 / Sheldon Road Interchange project was opened to traffic in January 2010. The project reconstructed the Sheldon Road interchange on SR 99 in the City of Elk Grove. The project included the relocation and capacity enhancement of the transit park-and-ride lot in the southeast quadrant of the interchange; including a bus shelter, and pedestrian crosswalks.

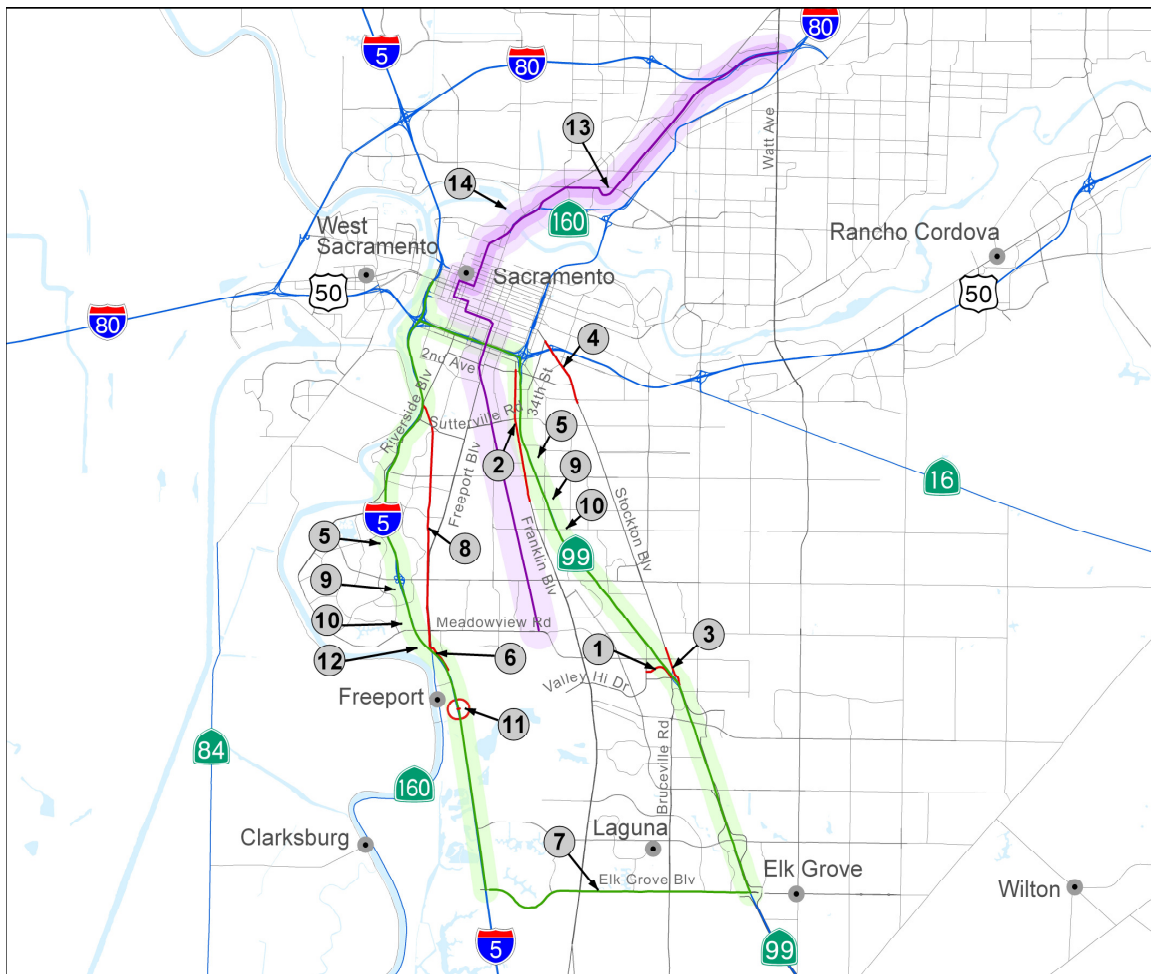
**SR 99 / Grant Line Road Interchange:** The SR 99 / Grant line Road Interchange project was opened to traffic in June 2009. The project reconstructed the Grant Line Road interchange on State Route 99 in the City of Elk Grove to expand interchange capacity. The project included a new, wider overcrossing structure to accommodate future traffic, bicycles, and pedestrians. In addition, new on and off ramps were constructed.

**I-5 High Occupancy Vehicle (HOV) Lanes Project – Elk Grove to Downtown:** The I-5 HOV Lanes Project from Elk Grove to Downtown Draft Environmental Document is scheduled to be released in the summer 2010. As part of the Interstate 5 HOV Lanes Project, the Project Development Team identified additional important transportation improvement projects to be included as part of the existing CSMP lists of “Key Capital Projects” and “Visionary Projects.” These include bike and transit enhancements. The projects will complement the I-5 HOV lane project and enhance corridor mobility. The projects originated with corridor stakeholders including, but not limited to, SACOG, the Cities of Sacramento and Elk Grove, Sacramento Regional Transit, and E-Tran. Caltrans will continue to assist each sponsoring jurisdiction with the further development of each project, including identifying and securing local, state and federal funding. The projects in Table 2 and Figure 3 are in **addition** to the existing “Key Capital Projects” and “Visionary Projects” already included in the CSMP:

**Table 2: Additional Visionary Project**

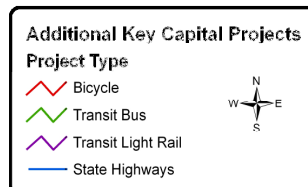
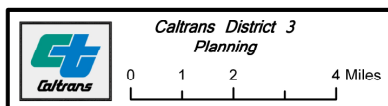
County	Route/Roadway	From	To	Project Description
SAC	SacRT South Line Light Rail	Downtown	Elk Grove	Reduce headways during peak hours from 15 minutes to 7.5 minutes

**Figure 3: Additional Key Projects**



Project	Lead Agency	Route/Roadway	From	To	Project Description
1	City of Sacramento	Bruceville Road	Wyndham Drive	Valley Hi Drive	Class II Bicycle Facility
2	City of Sacramento	Franklin Blvd.	38th Avenue	2nd Avenue	Class II Bicycle Facility
3	City of Sacramento	Stockton Blvd.	Massie Court	Rangeview Lane	Class II Bicycle Facility
4	City of Sacramento	Stockton Blvd.	6th Avenue	34th Street	Class II Bicycle Facility
5	City of Elk Grove/ e-Tran	SR 99 & I-5	Elk Grove Blvd.	Downtown	Expand Commuter Bus Service
6	City of Sacramento	I-5	Cavalier Way	Freeport Blvd. OC	Class I Bicycle Facility
7	City of Elk Grove	Elk Grove Blvd.	I-5	SR 99	Signal priority improvements for buses
8	City of Sacramento	Del Rio Trail	Riverside/ Land Park Rail Road Bridge	Freeport Blvd. OC	Class I Bicycle Facility
9	TBD	SR 99 & I-5	Elk Grove Blvd.	Downtown	Park and Ride Lots
10	City of Elk Grove	SR 99 & I-5	Elk Grove Blvd.	Downtown	Equip Buses with bike racks
11	City of Sacramento	I-5	South of Meadowview	South of Meadowview	New Bike/Ped OC in the Delta Shores
12	TBD	I-5	Elk Grove Blvd.	Downtown	Bike Route improvements at interchanges
13	SacRT	SacRT	*Downtown	Watt I-80 Light Rail Station	Double Track
14	SacRT	SacRT	*Meadowview	Watt I-80	Limited Stop Service

\* Limited Stop service from Meadowview to downtown is not feasible without double tracking existing line from downtown to Watt/I-80.



## Performance Measures

Continuous corridor monitoring and performance measures are an integral part of corridor management and investment decision making to help identify immediate, efficient, and effective system operational strategies and capital improvements. Performance measures provide the important, dynamic daily information needed to rapidly address operational problems caused by recurrent and non-recurrent traffic congestion.

The 2009 CSMP identified performance measures for the SHS, local roadways, and transit to be used as part of the corridor system management process. As noted previously, there is limited or a lack of current performance data for city and county streets, and there is a need to develop additional transit and new bicycle performance measures. As such, this Report only includes SHS performance measures. As we continue to strive to establish a multi-modal CSMP, future iterations will include local roadways, transit, and bicycle performance measures

Tables 4 and 5 include the performance measures that were initially identified in the 2009 CSMP and have been updated using 2009 PeMS and Tach Run data. The 2009 CSMP used 2007 data from a number of different sources because of inconsistent and unreliable PeMS coverage. Since the completion of the 2009 CSMP additional detection has been completed offering better PeMS coverage and more reliable data. As a result, we will use this Report and the 2009 performance measures as our baseline to track system performance and future annual “State of the Corridor” reports will include run-charts indicating changes in the performance measures in logical time increments.



Table 3: State Route 99 CSMP Highway Performance Measures Summary

County	Location	Post Miles	Distance (Miles)	Average Annual Daily Traffic <sup>1</sup>	Performance Measures (2008 Data)							
					LOS <sup>1</sup>	Total Vehicle Hours of Delay <sup>2</sup>	Total Vehicle Hours of Delay <sup>2</sup>	Minutes of Delay per Vehicle <sup>2</sup>	Minutes of Delay per Person <sup>2</sup>	Vehicle Travel Time (Minutes) <sup>2</sup>	Distressed Pavement (lane miles) <sup>4</sup>	2006-2009 Reported Collision Rate Comparison (%) <sup>5</sup>
						Daily	Peak Hour <sup>3</sup>	Peak Hour <sup>3</sup>	Peak Hour <sup>3</sup>	Peak Hour <sup>3</sup>		
SAC	San Joaquin/Sacramento County Line to Elk Grove Boulevard	0.00 - 12.76	12.76	65,000	D	473	62	0.72	0.79	13.48	2	-27%
	Elk Grove Boulevard to Mack Road	12.76 - 17.66	4.90	151,000	F	1,290	226	2.98	4.23	7.85	0	-25%
	Mack Road to Fruitridge Road	17.66 - 21.94	4.28	178,000	F	2,687	460	5.04	7.16	9.32	0	31%
	Fruitridge Road to Junction SR 51	21.94 – 24.35	2.41	214,000	F	1,433	330	1.42	2.02	3.83	0	70%
	Junction I-5 to Sacramento/Sutter County Line	32.12 – 36.86	4.74	51,000	D	235	79	1.11	1.22	5.85	0	-31%
SUT	Sacramento/Sutter County Line to South of Feather River Bridge	0.00 – 11.50	11.50	37,500	C	389	51	0.31	0.34	11.15	7	-59%
	South of Feather River Bridge to Passing Lanes North of Sacramento Avenue	11.50 – 14.00	2.50	16,100	E	67	13	0.48	0.52	2.98	0	-44%
	Passing Lanes North of Sacramento Avenue to Wilson Road	14.00 – 17.77	3.77	15,800	B	0	0	0.00	0.00	3.48	0	-59%
	Wilson Road to North of Junction SR 113	17.77 – 22.99	5.22	16,100	E	105	21	0.81	0.90	6.03	1	7%
	North of Junction SR 113 to Lincoln Road	22.99 – 28.67	5.68	23,200	B	83	17	0.49	0.54	6.17	0	10%
	Lincoln Road to SR 20	28.67 – 30.63	1.96	32,000	D	362	72	2.20	2.42	4.16	0	67%
Total		--	59.72	--	--	7,124	1,331	15.56	20.14	74.30	10	--

<sup>1</sup> Average Annual Daily Traffic and Level of Service (LOS) based on the 2008 Caltrans Traffic Volumes on California State Highways and Highway Capacity Manual. LOS Calculations based on 2008 Peak Hour Volumes.

<sup>2</sup> Delay is the average additional travel time by vehicles/persons traveling under 60 mph. Data derived from 2009 PeMS and Tach Run data.

<sup>3</sup> Peak Hour is during the hour in which the most hourly delay occurs.

<sup>4</sup> Source: 2009 Caltrans’ Division of Maintenance *Pavement Summary Report*. Distressed pavement is categorized as (1) “Major Structural Distress” which indicates the pavement has severe cracking and is likely to have a poor ride, (2) “Minor Structural Distress”, which indicates the pavement has moderate cracking and may have a poor ride, and (3) “Poor Ride Quality (Only)”, which indicates the pavement exhibits few cracks but has a poor ride condition.

<sup>5</sup> Source: 2006 through 2009 Caltrans’ *Traffic Accident Surveillance and Analysis System* (TASAS) summary data of the percentage above, or below, the statewide average for fatal, injury and property damage-only collisions on comparable facilities.



Table 4: Interstate 5 CSMP Highway Performance Measures Summary

County	Location	Post Miles	Distance (Miles)	Average Daily Traffic <sup>1</sup>	Performance Measures (2008 Data)							
					LOS <sup>1</sup>	Total Vehicle Hours of Delay <sup>2</sup>	Total Vehicle Hours of Delay <sup>2</sup>	Minutes of Delay per Vehicle <sup>2</sup>	Minutes of Delay per Person <sup>2</sup>	Vehicle Travel Time (Minutes) <sup>2</sup>	Distressed Pavement (lane miles) <sup>4</sup>	2006-2009 Reported Collision Rate Comparison (%) <sup>5</sup>
						Daily	Peak Hour <sup>3</sup>	Peak Hour <sup>3</sup>	Peak Hour <sup>3</sup>	Peak Hour <sup>3</sup>		
SAC	Hood-Franklin Boulevard to Elk Grove Boulevard	8.49 – 10.83	2.34	56,000	C	300	34	0.44	0.49	2.78	3	-64%
	Elk Grove Boulevard to Laguna Boulevard	10.83 – 12.04	1.21	69,000	D	204	20	0.10	0.11	1.28	1	-42%
	Laguna Boulevard to Pocket Road	12.04 – 16.15	4.11	92,000	E	1,010	121	0.77	0.84	4.80	4	-64%
	Pocket Road to US 50 ramps south of I-5/US 50 Interchange	16.15 – 22.00	5.85	145,000	F	1,390	291	1.70	1.87	7.54	6	-39%
	US 50 ramps south of I-5/US 50 Interchange to Richards Boulevard	22.00 – 24.65	2.65	181,000	F	735	236	1.56	1.72	4.19	0	10%
	Richards Boulevard to I-5/I-80 Interchange	24.65 – 26.69	2.04	185,000	F	500	100	0.54	0.59	2.53	0	-44%
	I-5/I-80 Interchange to I-5/SR 99 Interchange	26.69 – 29.91	3.21	144,000	E	368	67	0.40	0.44	3.58	0	-52%
	I-5/SR 99 Interchange to Sacramento/Yolo County Line	29.91 – 34.65	4.74	77,000	C	180	15	0.41	0.45	5.14	0	-38%
Yolo	Sacramento/Yolo County Line to County Road 102	0.00 – 5.53	5.53	51,000	C	178	15	0.10	0.11	5.58	0	-22%
	County Road 102 to I-5/SR 113 Junction	5.53 – 8.26	2.73	43,000	B	158	14	0.46	0.51	3.19	0	-38%
Total		--	34.41	--	--	5,023	913	6.48	7.13	40.61	14	--

<sup>1</sup> Average Annual Daily Traffic and Level of Service (LOS) based on the 2008 Caltrans Traffic Volumes on California State Highways and Highway Capacity Manual. LOS Calculations based on 2008 Peak Hour Volumes.

<sup>2</sup> Delay is the average additional travel time by vehicles/persons traveling under 60 mph. Data derived from 2009 PeMS and Tach Run data.

<sup>3</sup> Peak Hour is during the hour in which the most hourly delay occurs.

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<sup>5</sup> Source: 2006 through 2009 Caltrans’ *Traffic Accident Surveillance and Analysis System* (TASAS) summary data of the percentage above, or below, the statewide average for fatal, injury and property damage-only collisions on comparable facilities.

## **Moving Forward**

The following key opportunities and challenges should be addressed as we move forward to implement system management within this corridor.

### **Transit and Bicycle Performance Measures**

The analysis of transit performance was limited to one performance measure – Available Daily/Peak Hour Capacity (%). This measure compares ridership with capacity on a daily and peak hour basis. The intent was to indicate how well transit was performing relative to ridership increases over time. However, the usefulness of this measure has proven questionable, since some of the routes and schedules have changed and data availability is limited. In addition, the 2009 CSMP did not include bicycle performance measures, though, committed to working with stakeholders to establish them. In an effort to establish additional performance measures for transit and bikes, we will continue to work with our local and regional partners to develop useful performance measures for alternative transportation modes, including consideration of the performance measures being developed by Sacramento Area Council of Governments (SACOG) as part of the Metropolitan Transportation Plan update process.

### **Highway 99 Proposition 1B Cost Savings**

A consensus building process is currently underway to select and prioritize projects to be funded from the cost savings from projects already programmed and going to construction as part of the Highway 99 Proposition 1B Bond Program. Project selections will require the approval of the CTC. The Bond Program distributed funds based on 15 percent to the north for the Sacramento Valley and counties north of Sacramento/San Joaquin County line and 85 percent to the south for the San Joaquin Valley. Project savings will remain within the geographic boundaries where the savings were attained. Participating in the discussions are the cities of Sacramento, Marysville, Yuba, Chico, Live Oak, and Gridley, the counties of Sacramento, Yuba, and Sutter, SACOG, the Butte County Association of Governments, and Caltrans Districts 2 and 3.

### **Sacramento Regional Transit Service Cuts**

In response to an estimated \$25 million budget shortfall for Fiscal Year 2011, the Sacramento Regional Transit District (SacRT) Board of Directors approved major service reductions to bus, light rail, and paratransit service. Included in the service reductions, is the elimination of the 50E Stockton Boulevard Bus Rapid Transit servicing Florin Mall to downtown route and the elimination of all remaining bus and light rail trips after 9pm.

### **SR 99 Soundwall Project**

The Highway 99 Soundwall Community Safety and Enhancement Project is an important step forward in Caltrans' efforts to improve community safety and aesthetics along the Highway 99 corridor in the Sacramento area between 12th Avenue and 47th Avenue. In partnership with the City of Sacramento, Sacramento County, and the community, Caltrans is proposing to sell the excess land situated between the soundwall and the adjacent property owners along the east side of the highway right-of-way. This will help alleviate criminal activity, improve public safety, and eliminate illegal trash dumping.

While this project is not directly linked to corridor mobility, it provides a perspective of context sensitive corridor management as well as demonstrates a good community planning link.

### **SR 99/Elkhorn Park and Ride Lot**

A need has been identified for a park and ride lot location in the North Natomas area to serve the large amount of development expected in the area, express bus service for Sacramento to Marysville commuters, and carpools from Natomas to downtown Sacramento. The North Natomas Transportation Management

Association and Yuba-Sutter Transit have reached similar conclusions. While there is a lot near the SR 99/Elkhorn interchange, there are a number of issues associated with it, including lack of accessibility for buses, security concerns, and limited parking capacity. To address this need, Caltrans will initiate a Project Initiation Document to explore the possibility of expanding and improving the lot and enhancing security. This is consistent with the SR 99/I-5 CSMP where expanding park and ride facilities is identified as a CSMP strategy.

### **SR 99/Bogue Road Park and Ride Lot**

The SR 99/Bogue Road Park and Ride Lot will be expanded in two phases. Phase 1 will increase the number of spaces from 88 spaces to 150 spaces. Phase 2 of the project will increase the number of spaces from 150 spaces to 300 spaces. The project is being funded by the Yuba-Sutter Transit Agency using Congestion Mitigation Air Quality funds and local funds. The expansion will benefit the traveling and commuting public, by offering an alternative to single occupancy vehicle trips. The lot has been operating beyond capacity causing drivers to park illegally in the lot and overflow on to the adjacent city streets. Preliminary design work and environmental clearance is close to completion. Currently, project construction is contingent upon acquiring 2.5 acres; therefore there is no certainty when the project will go to construction though it's estimated to be during the 2011/2012 construction season.

### **Subregional Mitigation Fee Program**

The Cities of Elk Grove, Sacramento, and West Sacramento, Caltrans, SacRT, and SACOG are working together to develop a Subregional Mitigation Fee Program that would provide an alternative method for developers to mitigate the cumulative impacts of their projects in lieu of conventional traffic impact studies. The new fee program would provide a funding source for specific transit, local road, and highway projects within the I-5 and SR 99 corridors. The fee program needs to complete a California Environmental Quality Act process before it can be implemented.

### **Capital Southeast Connector**

The Capital Southeast Connector is a proposed 35-mile roadway that will link communities in El Dorado and Sacramento Counties and the cities of Folsom, Rancho Cordova and Elk Grove. It spans from Interstate 5, south of Elk Grove, to Highway 50 in El Dorado County, just east of El Dorado Hills. The Connector is intended to alleviate traffic congestion on US 50, Interstate 5, and State Route 99. It will allow drivers to completely bypass downtown Sacramento, reducing the distance traveled and helping minimize additional travel delays during rush hour. More information can be found at: <http://connectorjpa.net/>.

### **Operational Improvement Projects**

The SR 99/I-5 CSMP recognizes that with the construction of California's state highway system virtually complete in the Sacramento region, major emphasis has largely shifted to focused capacity expansions, system maintenance, and operational improvements such as ramp meters, ramp widening, auxiliary lanes, and ramp merge extensions. To address these needs, Caltrans is currently developing Project Study Reports (PSRs) for certain high priority operational improvement projects that will be the most affective in relieving congestion. Caltrans will seek funding for these projects through all available means, including SACOG regional discretionary funding programs. These projects are:

#### Interstate 5

- Construct auxiliary lane southbound I-5 between Florin Road and Pocket Road – EA#1F160K

#### State Route 99

- Widen Ramps and Install Ramp Meters: Southbound Florin Rd. (westbound), southbound Florin Rd. (eastbound), 12<sup>th</sup> Ave. (southbound), and Broadway (southbound) – EA#1F230K

In addition, the following additional operational improvement needs have been identified to optimize system performance. To help facilitate the implementation of these projects, Caltrans will include these projects in our 3 Year PSR Program in anticipation of the pursuit of regional discretionary funding.

#### Interstate 5

- Ramp Meter NB Richards Blvd.
- SB I-5 near US 50 add auxiliary lane starting at the US 50 connector ramp and ending at the Sutterville Road off-ramp.
- NB I-5, near US 50 extend the #2 lane connector ramp starting at its entrance to US 50 and ending at the P Street on-ramp.
- SB I-5, north of downtown, add auxiliary lane starting at the Garden Highway off-ramp and ending at the Garden Highway on-ramp.
- NB and SB I-5, extend #4 lanes starting at the Pocket Road southern most ramps and ending at the Florin Road northern most ramps.
- NB I-5, add auxiliary lane from the SR 99 connector to Airport Blvd.

#### State Route 99

- Ramp Meter SB Fruitridge Rd.
- Ramp Meter SB Martin Luther King Jr. Blvd.
- Ramp Meter SB 47<sup>th</sup> Ave. (from WB)
- Ramp Meter SB 47<sup>th</sup> Ave. (from EB)
- Standard inside and outside shoulder width between 47th Ave. and US 50.
- NB SR 99, add auxiliary lane from Florin Rd. to 47th Ave.
- NB SR 99, add auxiliary lane from 47th Ave. to Fruitridge Rd.
- SB SR 99, add auxiliary lane from Martin Luther King Blvd. to 47th Ave.
- NB and SB SR 99, standard lanes (11 feet to 12 feet) between Fruitridge Ave. and US 50.
- SB SR 99, ramp widening and ramp meter placement on all on-ramps.

#### **Intelligent Transportation Systems**

Intelligent Transportation Systems (ITS) are a key system management component. ITS provides an opportunity to improve mobility through the corridor by using lower cost strategies to improve overall efficiency without adding capacity. An array of technologies are used to detect and manage transportation activities in the corridor such as Closed Circuit Television System (CCTV), Changeable Message Signs (CMS), Extinguishable Message Signs (EMS), Electronic Tag Reader (ETR), Highway Advisory Radio (HAR), Ramp Meters (RMS), Roadside Weather Information System (RWIS), and Traffic Monitoring Stations (TMS), typically spaced every ½ miles in the urbanized areas of District 3.

The use of the ITS tools in conjunction with the Regional Transportation Management Center improve efficiency by collecting and disseminating traffic information to the travelling public. This helps reduce delay and improve safety within the corridor. The May 2009 CSMP identified a variety of system management strategies and elements currently being utilized on the managed network and their locations. The following table shows the ITS needs for the SR 99/I-5 corridor.

State Route 99		
Element	County/PM	Location
CCTV	SAC/12.89	Elk Grove Blvd.
CCTV	SAC/14.00	Laguna Blvd./Bond Road
CCTV	SAC/15.02	Sheldon Road
CCTV	SAC/15.90	Calvine Road
CCTV	SAC/33.40	Elkhorn Blvd.
CCTV	SAC/35.40	Elverta Road
CCTV	SUT/0.20	Striplin Road
CCTV	SUT/9.10	S/O Feather River
CCTV	SUT/14.10	N/O Feather River
CMS	SAC/5.00	NB S/O Arno Road
CMS	SAC/36.00	SB N/O Elverta Road
CMS	SUT/7.60	NB S/O Jct. 70
RMS	SAC/11.10	SB Poppy Ridge Road
RMS	SAC/11.20	NB Poppy Ridge Road
RMS	SAC/12.61	SB Elk Grove Blvd.
RMS	SAC/16.98	SB Stockton Blvd.
RMS	SAC/17.51	SB Bruceville Road
RMS	SAC/19.50	SB Florin Road (EB)
RMS	SAC/19.70	SB Florin Road (WB)
RMS	SAC/20.73	SB 47 <sup>th</sup> Avenue (EB)
RMS	SAC/20.94	SB 47 <sup>th</sup> Avenue (WB)
RMS	SAC/21.56	SB Martin Luther King Jr. Blvd.
RMS	SAC/21.83	SB Fruitridge Road (EB)
RMS	SAC/22.90	SB 12 <sup>th</sup> Avenue
RMS	SAC/23.85	SB Broadway
RMS	SAC/33.18	SB Elkhorn Blvd. (EB)
RMS	SAC/33.32	NB Elkhorn Blvd. (EB)
RMS	SAC/33.41	SB Elkhorn Blvd. (WB)
RMS	SAC/33.55	NB Elkhorn Blvd. (WB)
RMS	SAC/35.30	SB Elverta Road
RMS	SAC/35.40	NB Elverta Road
RMS	SUT/0.90	SB Riego Road
RMS	SUT/1.00	NB Riego Road
RMS	SUT/3.00	SB Sankey Road
RMS	SUT/3.10	SB Sankey Road
RMS	SUT/4.30	SB Sutter Bay Blvd. (EB)
RMS	SUT/4.40	NB Sutter Bay Blvd. (EB)
RMS	SUT/4.50	SB Sutter Bay Blvd. (WB)
RMS	SUT/4.60	NB Sutter Bay Blvd. (WB)
RMS	SUT/5.40	SB Howsley Road
RMS	SUT/5.61	NB Howsley Road
TMS	SAC/0.00	San Joaquin County Lines
TMS	SAC/3.50	Twin Cities Road
TMS	SAC/8.80	McConnell OH
TMS	SAC/32.80	S/O Elkhorn Blvd.
TMS	SAC/33.80	N/O Elkhorn Blvd.
TMS	SAC/34.30	N/O Elkhorn Blvd.
TMS	SAC/34.80	N/O Elkhorn Blvd.
HAR	SAC/8.80	McConnell OH
HAR	SUT/7.60	99/70 Jct.
CCTV	SAC/8.50	Hood Franklin Road IC
CCTV	SAC/10.80	Elk Grove Blvd. OC
CCTV	SAC/12.20	Laguna Blvd.
CCTV	SAC/28.30	Arena Blvd.
CCTV	SAC/29.00	Del Paso Road
CCTV	SAC/29.80	70/99 Jct.
CCTV	SAC/30.80	Metro Air Parkway

Interstate 5		
Element	County/PM	Location
CCTV	SAC/32.70	Airport Blvd.
CMS	YOL/5.80	NB Woodland 0.7 miles S/O Route 16
RMS	SAC/8.33	SB Hood Franklin Road (EB)
RMS	SAC/8.44	NB Hood Franklin (EB)
RMS	SAC/8.54	SB Hood Franklin Road (WB)
RMS	SAC/8.65	NB Hood Franklin (WB)
RMS	SAC/10.88	SB Elk Grove Blvd.
RMS	SAC/12.19	SB Laguna Blvd.
RMS	SAC/12.70	SB Cosumnes River Blvd.
RMS	SAC/12.80	NB Cosumnes Blvd.
RMS	SAC/16.03	SB Pocket Road (EB)
RMS	SAC/16.20	SB Pocket Road (WB)
RMS	SAC/17.04	SB Florin Road (EB)
RMS	SAC/17.26	SB Florin Road (WB)
RMS	SAC/19.19	SB Seamas Avenue
RMS	SAC/20.39	SB Sutterville Road
RMS	SAC/22.72	SB P Street
RMS	SAC/23.64	SB I Street
RMS	SAC/24.82	NB Richards Blvd.
RMS	SAC/28.88	SB Del Paso Road (EB)
RMS	SAC/28.96	NB Del Paso Road (EB)
RMS	SAC/29.08	SB Del Paso Road (WB)
RMS	SAC/29.16	NB Del Paso Road (WB)
RMS	SAC/30.80	SB Metro Air Parkway
RMS	SAC/30.90	NB Metro Air Parkway
RMS	SAC/32.69	NB Airport Blvd. (NB)
RMS	SAC/32.79	SB Airport Blvd. (SB)
RMS	SAC/32.87	NB Airport Blvd. (SB)
TMS	SAC/8.50	Hood Franklin Road
TMS	SAC/30.20	70/99 Jct.
TMS	SAC/30.70	Metro Air Parkway
TMS	SAC/31.20	S/O Metro Air Parkway
TMS	SAC/31.70	S/O Metro Air Parkway
TMS	SAC/32.20	S/O Metro Air Parkway
TMS	SAC/32.70	Airport Blvd.
TMS	YOL/7.10	I-5/113 Separation
HAR	YOL/7.10	I-5/113 Separation

The following ITS projects were proposed for inclusion in the 10 Year State Highway Operation and Protection Program (SHOPP). However, it is unlikely that the majority of these projects will be programmed through the SHOPP given limited resources and other higher priority basic maintenance needs. As such, Caltrans will seek funding for these projects through all available means, including regional discretionary funding programs. These are listed in priority order.

Priority	County/PM	Description	Cost (\$1,000)
1	Various	RMS and TMS Upgrade	1,700
2	Various	CCTV Camera System Upgrade	1,400
3	Various	RWIS Upgrade	1,000
4	Various	HAR System Upgrade	1,000
5	Various	Ramp Meter – Priority 1	4,000
6	Various	Ramp Meter – Priority 2	4,000
7	Various	Travel Time Infrastructure	1,800
8	Various	CMS Phase II	6,750
9	Sac	Fiber Optic	2,000
10	Various	CCTV Cameras – Outlying Area	1,200

## **Micro-simulation Modeling**

Since the beginning of the development of the CSMPs, Caltrans has been working in parallel with a consultant team to develop micro-simulation traffic models of select CSMP corridors so that we can better understand at a detailed level how specific operational strategies and capital projects will impact traffic flow. The models include the freeway system, ramps, interchanges and key local roads. For the SR 99/I-5 Corridor, the model covers I-5 between Hood Franklin Road and Airport Boulevard (approximately 25 miles). Also covered is SR 99 between the Sacramento/San Joaquin County line and US 50 (approximately 25 miles) and between I-5 and the Sacramento/Sutter County line (approximately 5 miles). The models will enable Caltrans and its regional partners, to test an array of operational and capital project scenarios, to identify groups of strategies and projects for simultaneous or phased implementation, and to prioritize the order of implementation. The models will also enable us to forecast what will happen after projects are implemented, whether new problems will be created, and if so, how to avoid or mitigate those new problems before they occur. The models are nearing completion and are expected to be available for use in fall 2010. Comprehensive reports for each model are being drafted and will also be available in fall 2010.